

FIG. 1A



FIG.1B

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	βA	αB	βB	
	10	20	30	40
ERAB/HADH2	-----SVKGLVAVITGGASGLGLATAERLVGQ---	GASAVLLDL---	P	
7α-HSD	MFNSDNLRLDGKCAIITGAGAGIGKEIAITFATA---	GASVVVSDI---	N	
3α20β-HSD	-----NDLSG-KTVIITGGARGLGAEAAARQAVAA---	GARVVVLADV---	L	
17β-HSD	-----ARTVVLITGCSSGIGLHLAVRLASDPQSFKVYATLRDLKT			
CAA20237.1	--SQLQNLRLRSALALVTGAGSGIGRAVSVRLAGE---	GATVAACDL---	D	
15-PGD	-----MHVNGKVALVTGAAQGI GRAFAEALLK---	GAKVALVDWNLEA		
	o o o ● ● o ● ● o			

	αC	βC	αD	
	50	60	70	80
ERAB/HADH2	NSGGGEAQAKKLG-----	NNCVFAPADVTSEKDVQTALALAKGKFG		
7α-HSD	ADAANHVVDEIQQLG-----	GQAFACRCDITSEQELSALADFAISKLG		
3α20β-HSD	DEEGAATARELG-----	DAARYQHL DVT I EEDWQRVVVYAREEFG		
17β-HSD	QGRLWEAARALACPP-----	GSLETQLQDVRDSKSVAARERV--	TEG	
CAA20237.1	RAAAQETVRLGGPGSGKEGPPRGNHAAFQADVSEARAARCLLEQVQACFS			
15-PGD	GVQCKAALDEQFEP-----	QKTLFIQCDVADQQQLRDTFRKVVVDHFG		
		● o o o		

	βD	βDE1	βDE2	αE1	αE2
	90	100	110	120	130
ERAB/HADH2	RVDVAVN-CAGIAVASKTYNLKKGQTHLTLEDFQRVLVDNLMGTENVIRLV				
7α-HSD	KVDILVN-NAGGGGPKPF-----	DMPMAEFRFRAYELNVFSFFHLSQLV			
3α20β-HSD	SVDGLVN-NAGISTGMFLE-----	TESVERFRKVVVEINLTGVFIMGKTIV			
17β-HSD	RVDVLVC-NAGLGLLGPLE-----	ALGEDAVASVLDVNVVGTVRMLQAF			
CAA20237.1	RPPSVVVSCAGITQDEFLL-----	HMSDEDWDKVI AVNLKGTGLVTQAA			
15-PGD	RLDILVN-NAGVNNNEKNW-----	EKTLQINLVSVISGTYLGLDYM			
	● ●				

	βE	αEF	αF	
	140	150	160	170 180
ERAB/HADH2	AGEMGQNEPDQGGQRGVINTASVAAFEGQVGOAAAYSASKGGIVGMTLP			
7α-HSD	APEMEKNG-----	GGVILTTISMAAENKNINMTSYASSKAAASHLVRNM		
3α20β-HSD	IPAMKDAG-----	GGSVINISSAAGLMGLALTSSYGASKWGWVRLSKLA		
17β-HSD	LPMKRRG-----	SGRVLVTGSGVGLMGLPFNDVYCASKFALEGLCESL		
CAA20237.1	AQALVSN-----	CRGSIINISSIVGKVGNVGQNTNYAASKAGVIGLTQTATA		
15-PGD	SKQNGGEG-----	GIIINMSSLAGLMPVAQQPVYCAASKHGIVGFTRSA		
	● o o ● o ● ● o o			

FIG.2A

[illegible]

Model	Year	Model	Year	Model	Year	Model	Year
1980	1981	1982	1983	1984	1985	1986	1987
1988	1989	1990	1991	1992	1993	1994	1995
1996	1997	1998	1999	2000	2001	2002	2003
2004	2005	2006	2007	2008	2009	2010	2011
2012	2013	2014	2015	2016	2017	2018	2019
2020	2021	2022	2023	2024	2025	2026	2027
2028	2029	2030	2031	2032	2033	2034	2035
2036	2037	2038	2039	2040	2041	2042	2043
2044	2045	2046	2047	2048	2049	2050	2051
2052	2053	2054	2055	2056	2057	2058	2059
2060	2061	2062	2063	2064	2065	2066	2067
2068	2069	2070	2071	2072	2073	2074	2075
2076	2077	2078	2079	2080	2081	2082	2083
2084	2085	2086	2087	2088	2089	2090	2091
2092	2093	2094	2095	2096	2097	2098	2099
2100	2101	2102	2103	2104	2105	2106	2107
2108	2109	2110	2111	2112	2113	2114	2115
2116	2117	2118	2119	2120	2121	2122	2123
2124	2125	2126	2127	2128	2129	2130	2131
2132	2133	2134	2135	2136	2137	2138	2139
2140	2141	2142	2143	2144	2145	2146	2147
2148	2149	2150	2151	2152	2153	2154	2155
2156	2157	2158	2159	2160	2161	2162	2163
2164	2165	2166	2167	2168	2169	2170	2171
2172	2173	2174	2175	2176	2177	2178	2179
2180	2181	2182	2183	2184	2185	2186	2187
2188	2189	2190	2191	2192	2193	2194	2195
2196	2197	2198	2199	2200	2201	2202	2203
2204	2205	2206	2207	2208	2209	2210	2211
2212	2213	2214	2215	2216	2217	2218	2219
2220	2221	2222	2223	2224	2225	2226	2227
2228	2229	2230	2231	2232	2233	2234	2235
2236	2237	2238	2239	2240	2241	2242	2243
2244	2245	2246	2247	2248	2249	2250	2251
2252	2253	2254	2255	2256	2257	2258	2259
2260	2261	2262	2263	2264	2265	2266	2267
2268	2269	2270	2271	2272	2273	2274	2275
2276	2277	2278	2279	2280	2281	2282	2283
2284	2285	2286	2287	2288	2289	2290	2291
2292	2293	2294	2295	2296	2297	2298	2299
2300	2301	2302	2303	2304	2305	2306	2307
2308	2309	2310	2311	2312	2313	2314	2315
2316	2317	2318	2319	2320	2321	2322	2323
2324	2325	2326	2327	2328	2329	2330	2331
2332	2333	2334	2335	2336	2337	2338	2339
2340	2341	2342	2343	2344	2345	2346	2347
2348							

Fe^{2+} Fe^{3+} Fe^{4+} Fe^{5+} Fe^{6+} Fe^{7+} Fe^{8+} Fe^{9+} Fe^{10+} Fe^{11+} Fe^{12+}

Fe^{2+} Fe^{3+} Fe^{4+} Fe^{5+} Fe^{6+} Fe^{7+} Fe^{8+} Fe^{9+} Fe^{10+} Fe^{11+} Fe^{12+}

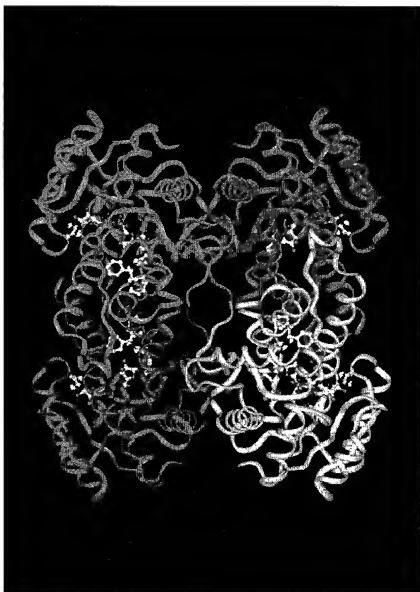


FIG. 3

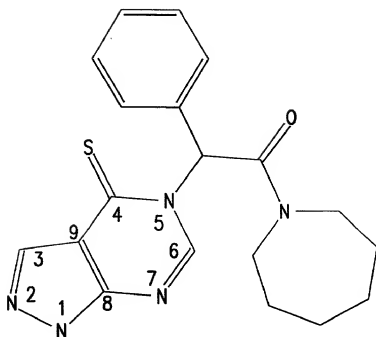


FIG. 4A

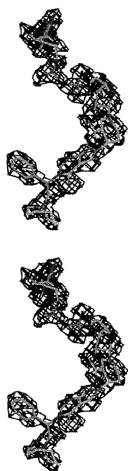


FIG.4B

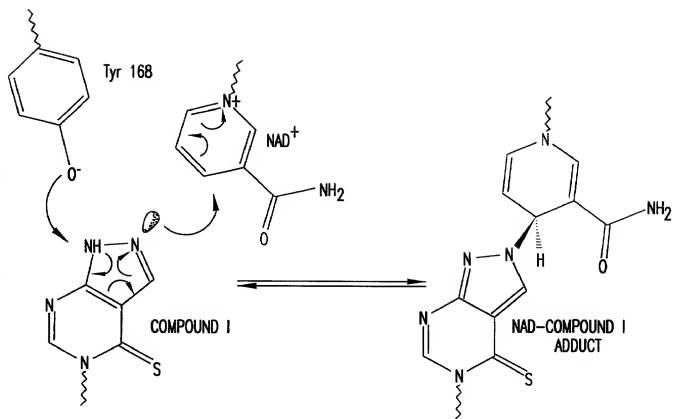


FIG. 4C

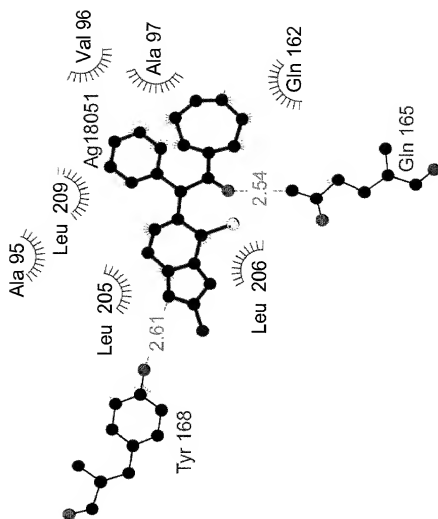


FIG.4D

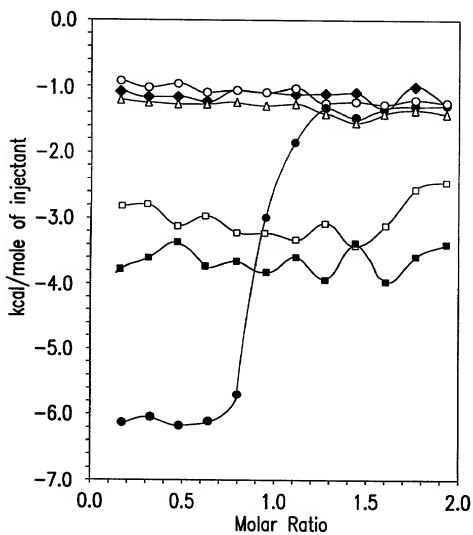


FIG.5



FIG.1B



FIG. 4B

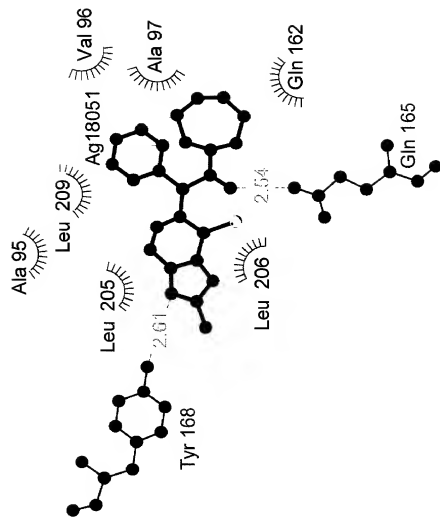


FIG.4D